

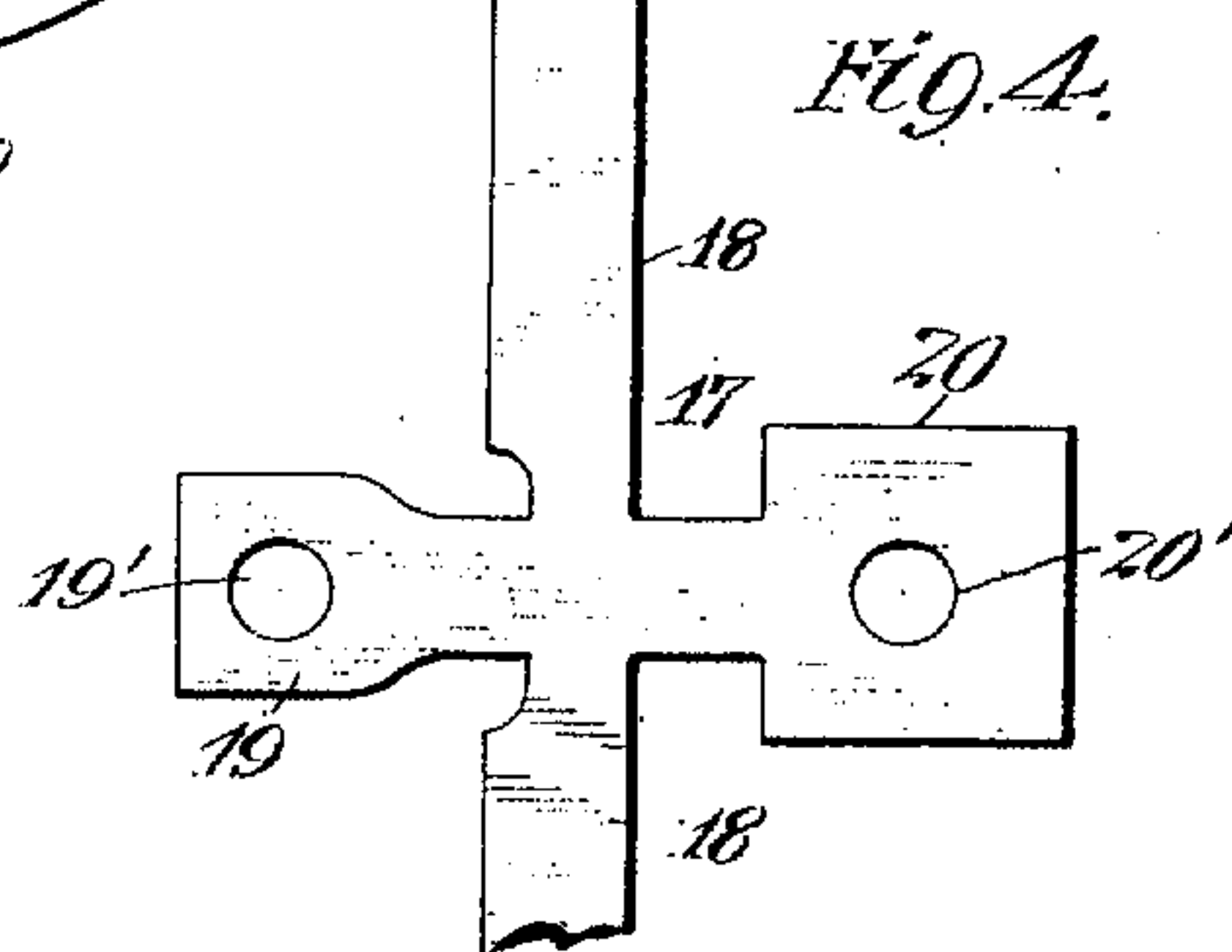
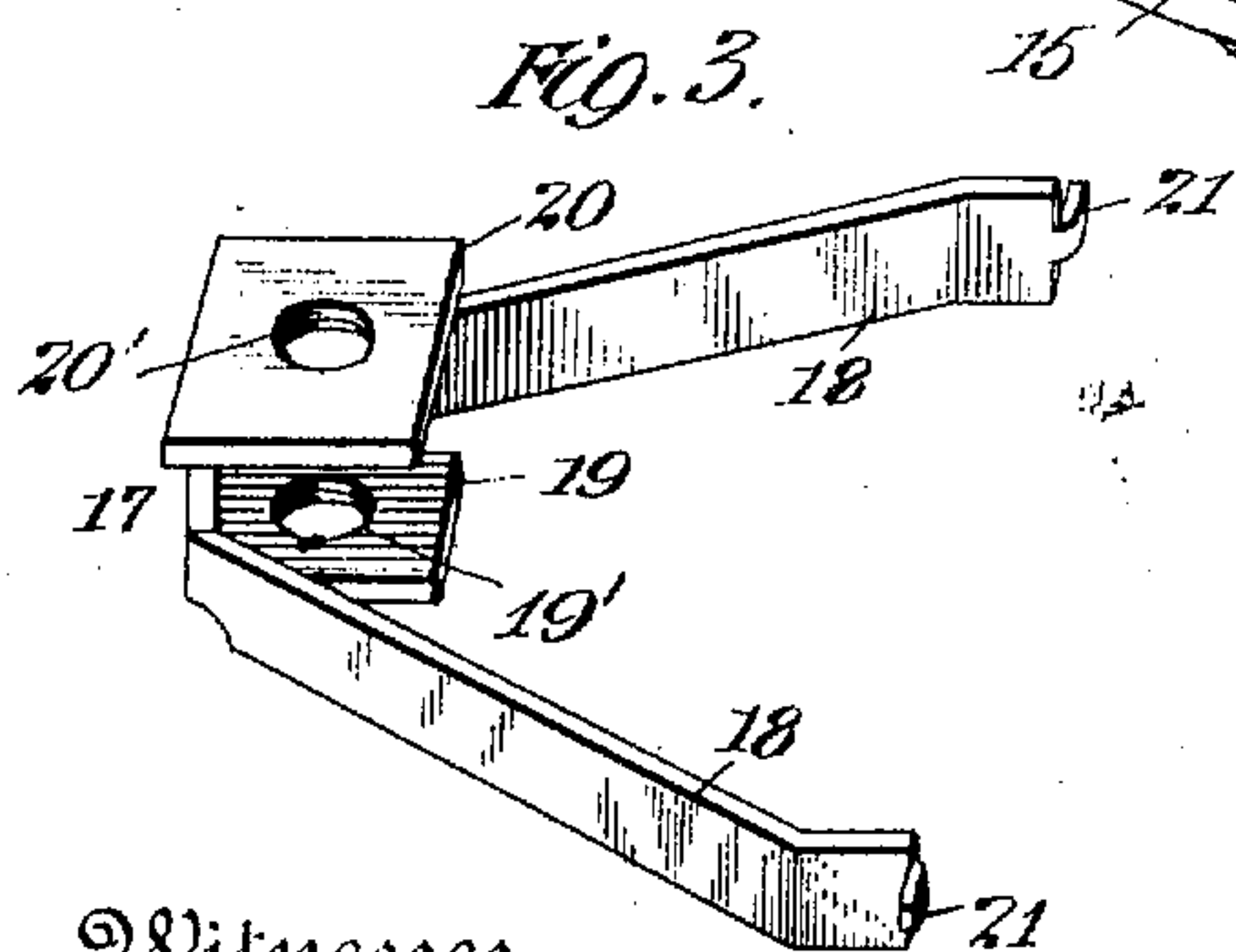
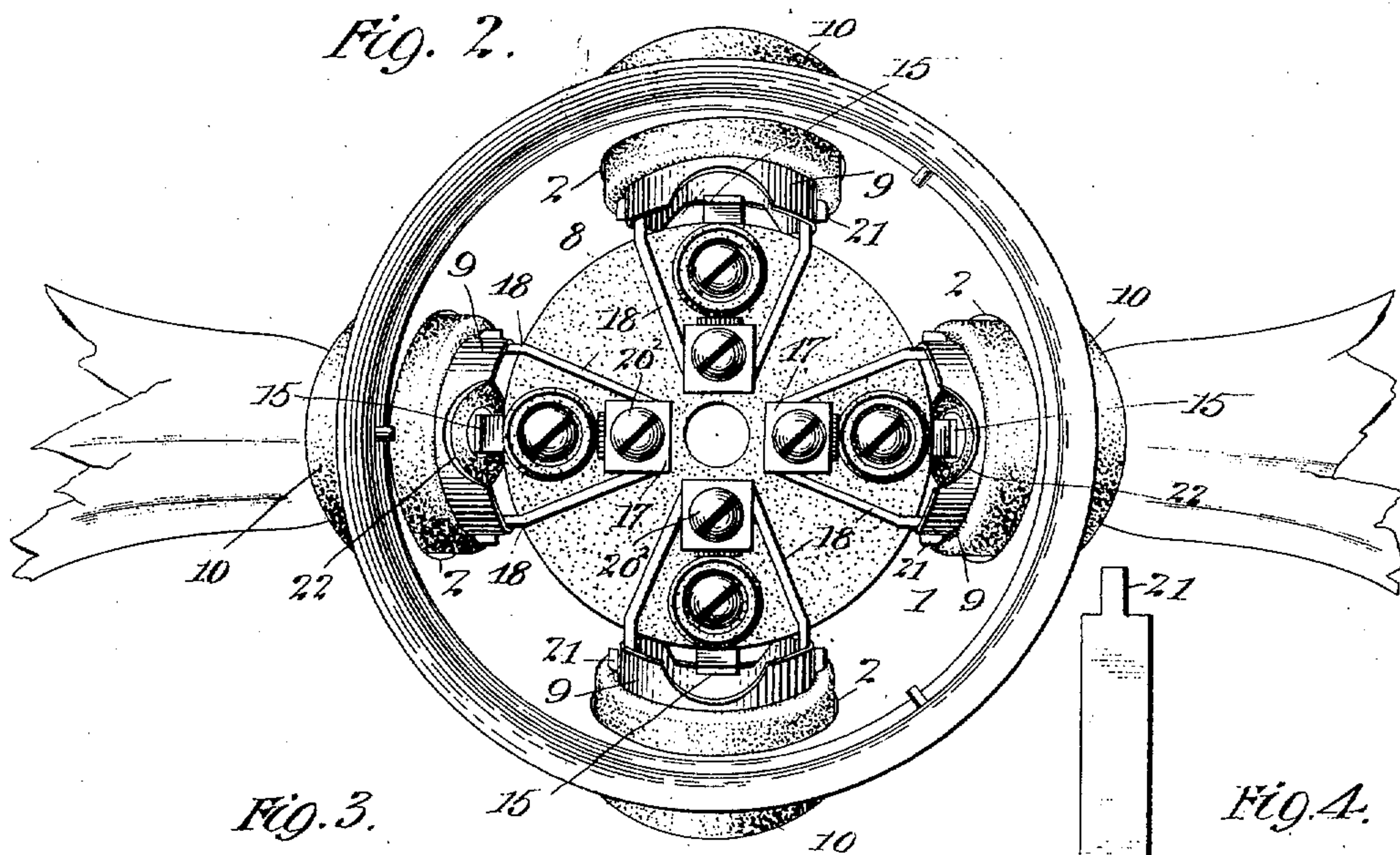
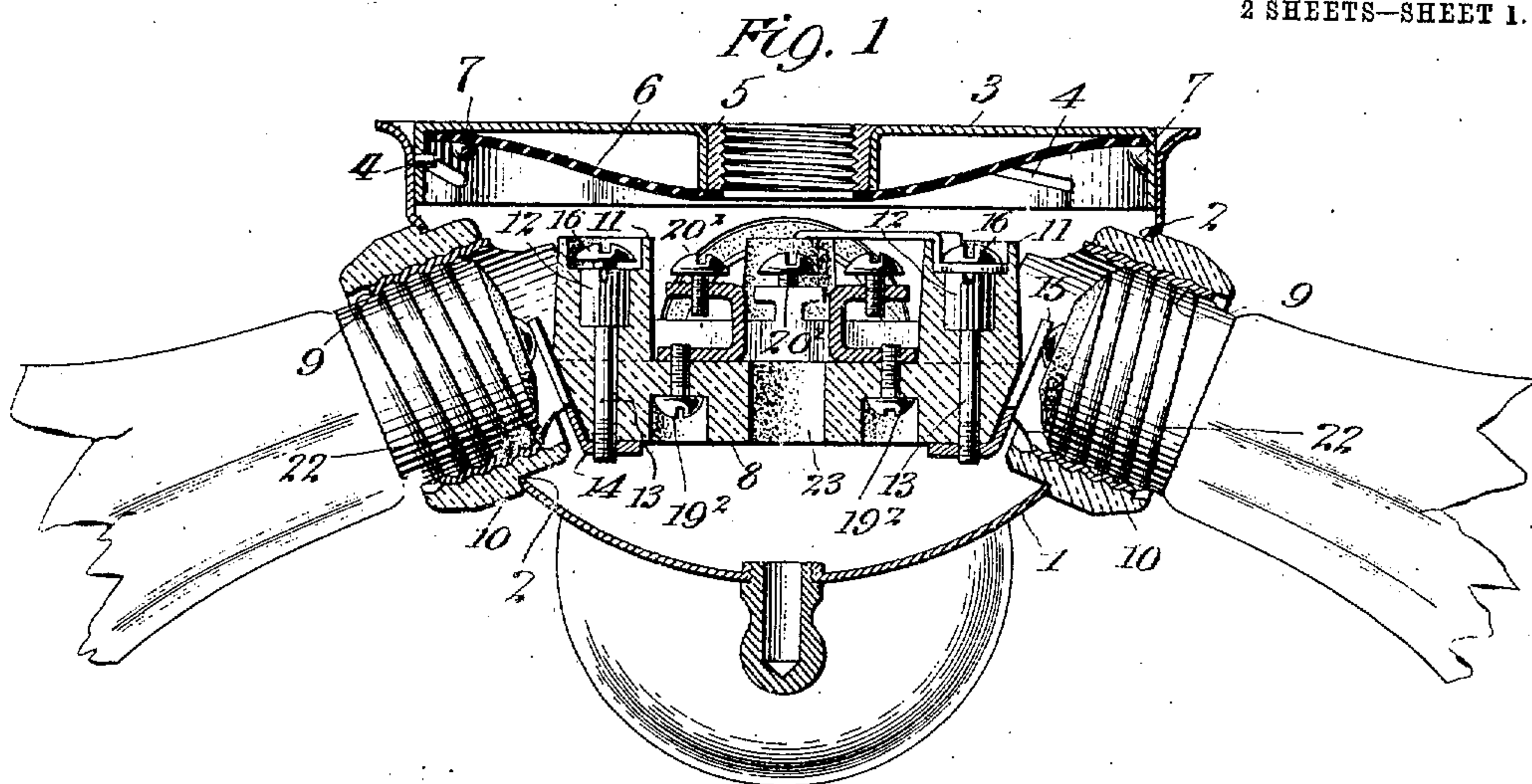
No. 846,912.

PATENTED MAR. 12, 1907.

J. H. DALE.
CLUSTER SOCKET.

APPLICATION FILED MAY 24, 1906.

2 SHEETS—SHEET 1.



Witnesses
James S. Ober
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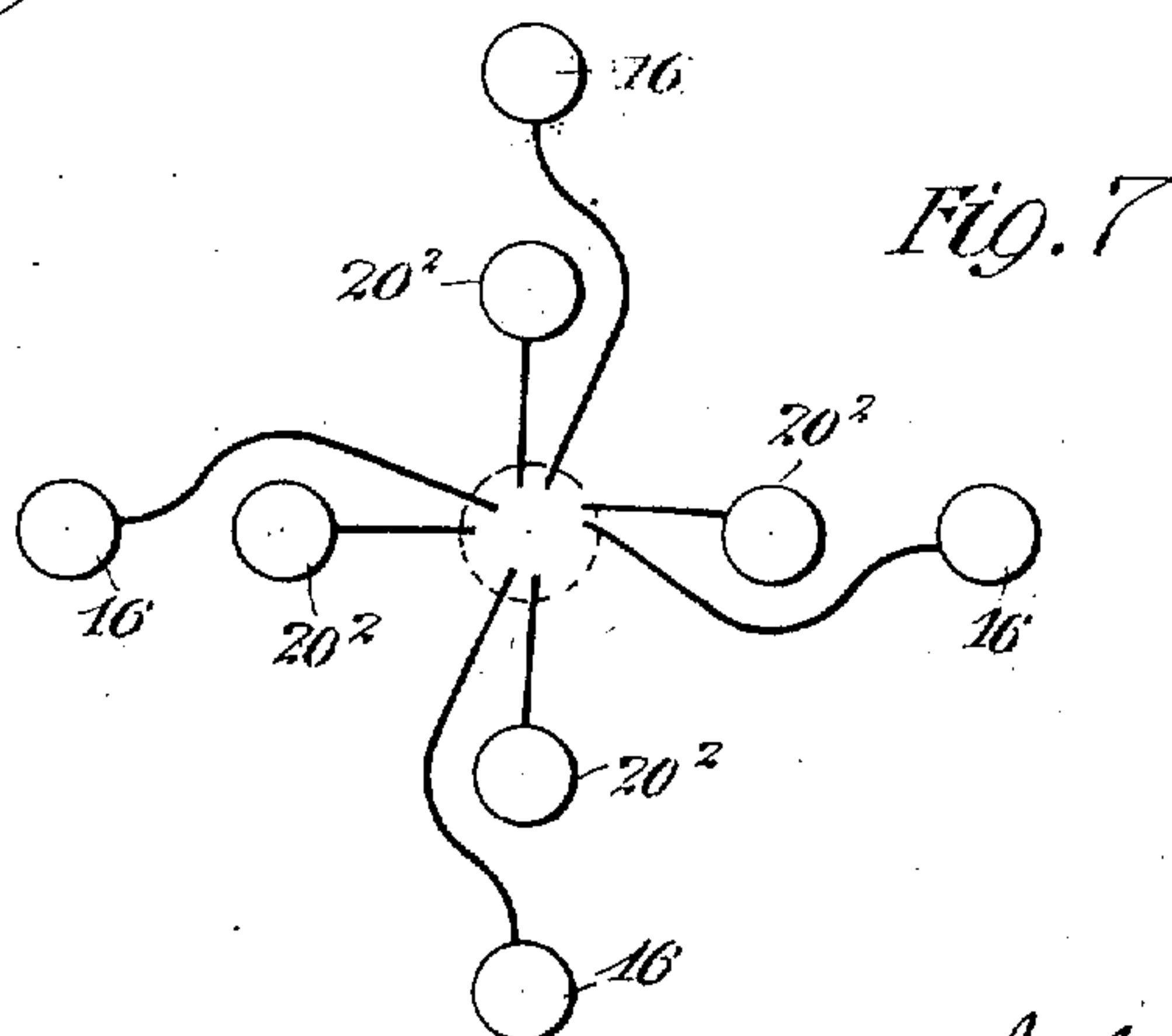
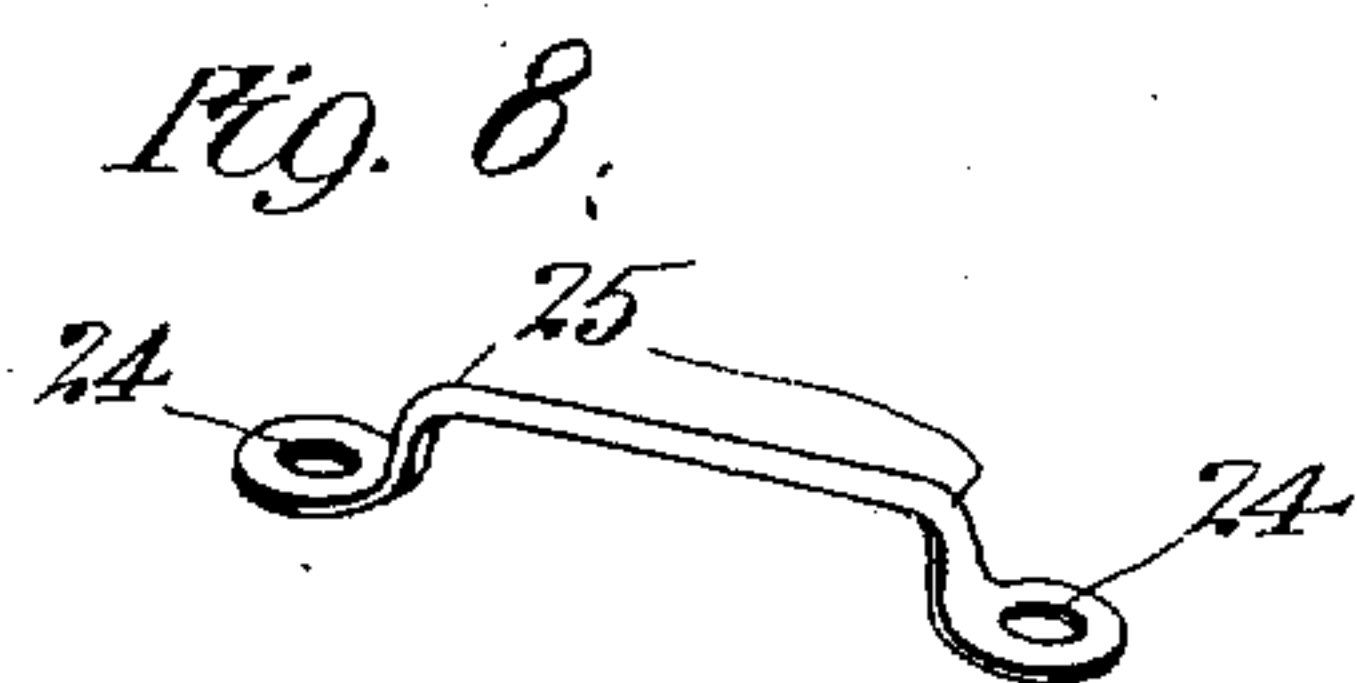
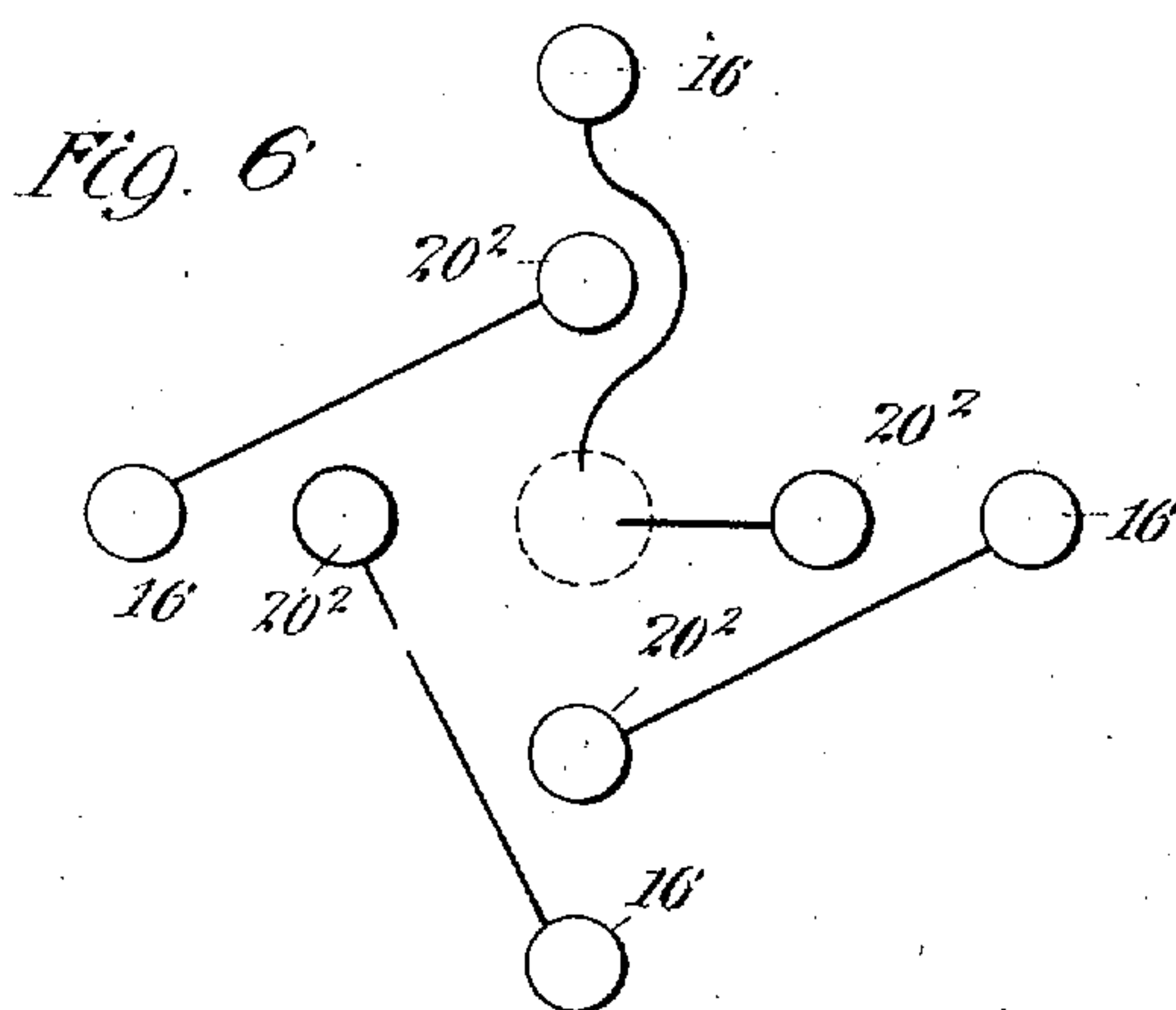
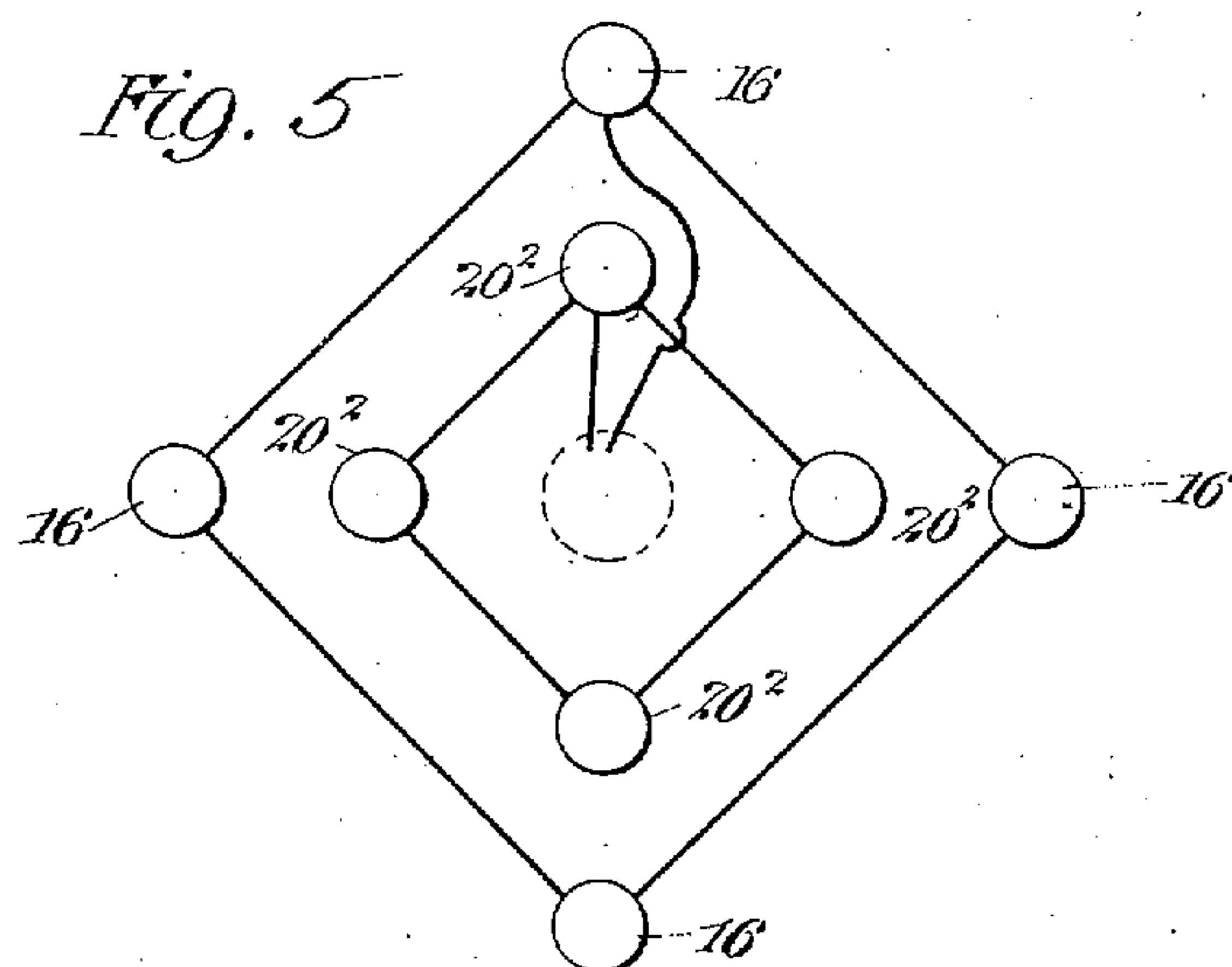
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UNITED STATES PATENT OFFICE.

JOHN H. DALE, OF NEW YORK, N. Y.

CLUSTER-SOCKET.

No. 846,912.

Specification of Letters Patent.

Patented March 12, 1907.

Application filed May 24, 1906. Serial No. 318,487.

To all whom it may concern:

Be it known that I, JOHN H. DALE, a citizen of the United States, residing at the city of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Cluster-Sockets, of which the following is a full, clear, and exact description.

My invention relates to receptacles or cluster-sockets for incandescent lamps, the principal object being to enable the individual lamps to be grouped in series, in multiple, or in any other combinations within the cluster without altering its structural characteristics in any way.

A further object of the invention is to provide a very compact, cheap, and easily-assembled form of cluster-socket.

Other objects of the invention are to secure a construction which is strong and durable and in which efficient insulation is provided between all the different metallic parts to preclude short-circuiting and grounds.

With these and other objects in view my invention consists in the construction, combination, in the location, and in the arrangement of parts, as hereinafter set forth and shown and finally particularly pointed out in the appended claims.

In the drawings, Figure 1 is a sectional view showing a cluster-socket embodying the principles of my invention. Fig. 2 is a plan view of the same with the top plate removed. Fig. 3 is a perspective view showing one of the metallic parts. Fig. 4 is a view illustrating a blank which may be bent to form the structure shown in Fig. 3. Fig. 5 is a diagram showing certain connections which I may employ. Fig. 6 is a similar diagram showing other connections. Fig. 7 shows still a different form of connection which may be used. Fig. 8 is a detail view showing a convenient link or clip for the purpose of making the necessary connections.

In place of individual lamps on separate brackets it is now customary to employ cluster-sockets with a hemispherical casing having equally-spaced openings thereabout in which the lamps are received. Some of these cluster-sockets are arranged to connect the lamps in series and some in multiple; but so far as I am aware in all cases the arrangement is permanent for any particular type. In other words, the series clusters cannot

be used to connect the lamps in multiple, and the multiple sockets cannot be employed for connecting the lamps in series. It is of course obvious that the lamps cannot be connected in series multiple or any special wiring in any case. Such special wiring is frequently desired in practice, however, notably where different lamps are in separate circuits, so as to be capable of separate illumination. The lamps are arranged in this way so that one, two, three, or the whole group may be lighted as desired. In carrying out my invention I aim to provide a cluster having all the advantages of forms hitherto used with respect to compactness, strength, and ease in assembling the different parts and, in addition to these features, to secure a universal arrangement by which the lamps can be combined in series and multiple or in any other desired or special way.

Referring now to the drawings, in which like parts are designated by the same reference-sign, 1 indicates a casing, preferably hemispherical in shape and which has orifices 2 conveniently spaced thereabout in equidistant relation.

3 indicates the top plate or cover, having boyonet-fastenings 4 with the casing 1 and having a central bushing 5, which may be threaded to engage any suitable bracket.

6 indicates an insulating-plate contained within the cover for a purpose hereinafter stated. A convenient method of holding the plate 6 in position is by means of indented portions 7 of the cover-rim which engage over the plate 6 and hold it in place.

Within the casing 1 is suspended what I shall term a "base" or "terminal" block 8, which has all the necessary terminal connections thereon and which is suspended wholly from the casing 1 through the insulating-bushings of the lamps. For this purpose the base or terminal block has threaded shells 9 projecting therefrom in a direction to be received axially within the perforations 2 of the casing, and these threaded shells are then firmly engaged and held in such coaxial relation by the insulating-bushings 10, which are threaded onto the shells and closely received into said perforations 2. By this means the shells, and with them the connected base or terminal block 8, are rigidly suspended in proper relation with the casing 1 and completely out of all electrical contact therewith. The man-

ner in which the shells are connected to the base or terminal block 8 will hereinafter more fully appear.

Referring now particularly to Fig. 1, it will be seen that the base or terminal block 8 is specially formed and recessed so as to be capable of having the various metallic parts and terminals attached thereto. In practice I make the block 8 of porcelain, which is molded in the form of a flat disk, having protuberances 11 on its upper surface, of which there are as many provided as are the lamps required. These protuberances are spaced around the block so as to lie opposite the apertures 2 of the casing 1. 12 indicate metallic bushings, having stems 13 threaded at their lower ends, so as to be engaged into properly-tapped metallic clips 14. The clips 14 are bent upward, so that their extremities 15 lie in the axial directions of the apertures 2 of the casing. 16 indicate headed screws, which are received into the metallic bushings 12 so as to constitute binding posts or terminals therewith. It will be seen that the bushings 12 and screws 16 lie in counterbored relation to the protuberances 11, so that an insulating-wall is produced around the terminal.

In the same radial lines with the protuberances 11 I also arrange metallic terminals 17, having arms 18. A practical method of constructing these terminals is illustrated in Figs. 3 and 4. A sheet-metal blank is first cut of the general form shown in Fig. 4 and having arms 18, 19, and 20. This plate is afterward bent into the form shown in Fig. 3, so that the arms 18 diverge from one another, while the arms 19 and 20 are in parallel planes. 19' and 20' indicate threaded holes in the two plates 19 and 20. These terminals are assembled upon the base or terminal block 8 by screws 19², in which relation the divergent arms 18 inclose the protuberances 11 between them. 20² are additional screws which constitute binding-posts. 21 indicate ears at the extremities of these arms, which are bent laterally into alinement with one another. The threaded shells 9, previously mentioned, have openings which are engaged by the ears 21, so that the shells are pivoted to the extremities of the arms. In practice the shells are cut away at their upper and lower sides, as shown at 22, in order to permit a wider range of pivotal movement and in order to preclude the possibility of any shells coming in contact with the clips 14. The complete cluster is assembled by flexing all of the shells downwardly upon their pivots until they are capable of insertion through the apertures 2, after which the bushings 10 are screwed thereon, so as to hold the shells, and with them the base or terminal block 8, firmly in position. The various screws 16 constitute terminals and are in electrical communication with the clips 15, which are in the path of the central

stud or protuberances of an ordinary incandescent lamp. The various screws 20² constitute terminals, being in direct metallic connection therewith. It is evident that wires may be engaged beneath any one of these screws or binding-posts for making any desired electrical connections. It will be seen that the bushings 12, their stems 13, and the clips 14 are separated widely at every point from any other metallic part or terminal. This is on account of the protection formed by the insulating-protuberances 11. In order to give still greater protection and security, the screws 19² are located in counterbored holes. An additional feature of practice relates to the provision of a central opening 23 in the base or terminal block 8 through which wires or connections may be led.

In order that the manner of use of the invention may be made clear, I have shown different plans of wiring and connecting the various terminals to secure different effects. In Fig. 5 the terminals are connected to give ordinary multiple wiring. For this purpose it is merely necessary to connect all of the screws 16 together by wire connections from one branch of the power-circuit and to connect the various binding-posts 20² together and to the other branch of the power-circuit. In Fig. 6 I have shown an arrangement by which the various lamps may be connected in series. For this purpose it is merely necessary to connect screws 16 and 20² together in non-corresponding pairs and to lead the final or remaining terminals to the power connections. In Fig. 7 I have shown the various lamps in entirely separate circuits for any suitable purpose—as, for example, in order that they may be individually illuminated. In all cases simple copper wires may be the connections; but I prefer to employ special connecting-clips of the form shown in Fig. 8. These have holes 24 at their extremities and may be bent at 25, so as to be capable of making connections from the depressed screws 16. In making these connections it is not necessary to use insulated or covered wire, since the various terminals are so arranged as to render any short-circuiting or grounds unlikely, even if bare connecting wires or strips are used. This is because all the connections lie between the insulating-base 8 and the insulating-disk 6, so that there is no place for the wires or connections to become grounded on the casing. The protuberances 11 are also extended above the plane of the other terminal connections 20², so that the wires from one terminal to another may actually pass over one another without coming into contact. When the different lamps are connected into individual circuits, as shown in Fig. 7, it is of course best to employ ordinary insulated wire for making the connections.

What I claim is—

1. In a receptacle or cluster-socket for incandescent lamps, a plurality of metallic parts having integral arms, terminal screws threaded into each of said parts, threaded shells pivoted to said arms, metallic clips extending to a point coaxial with said shells, and terminal screws on said clips, said terminal screws all projecting in the same general direction, whereby they may be connected in different ways.

2. In a receptacle or cluster-socket for incandescent lamps, a base-block, a plurality of metallic parts each having a terminal screw supported by said base-block, threaded shells supported by said parts, additional metallic clips also supported on said base-block and arranged to extend to points coaxial with said shells, and terminal screws on said metallic clips, all of said terminal screws projecting in the same direction from the base-block whereby they may be connected in different combinations as desired.

3. In a receptacle or cluster-socket for incandescent lamps, a base or terminal block, a plurality of metallic parts each having a pair of divergent arms secured to said block and constituting terminals, shells pivoted to said arms, metallic clips extending to points coaxial with said shells, and screws or connections passed through said block between said arms for holding the clips in place, said connections constituting terminals therefor.

4. In a receptacle or cluster-socket for incandescent lamps, a base or terminal block having protuberances and constituting a support for the threaded shells and central stud connections of incandescent lamps, and means passed through said protuberances and constituting terminals for said central stud connections.

5. In a receptacle or cluster-socket for incandescent lamps, a base or terminal block having protuberances threaded shells, means secured upon the upper face of said block and supporting said shells, metallic clips upon the lower face of said block and extending to points coaxial with said shells, and electric connections to said clips through said protuberances.

6. In a receptacle or cluster-socket for incandescent lamps, an insulating base or terminal block having threaded shells thereon and terminals therefor, and having protuberances opposite said terminals, metallic clips on the under face of said block and extending to points coaxial with said shells, and electric connections from said clips extending through said protuberances.

7. A receptacle or cluster-socket for incandescent lamps, comprising a base or terminal block having threaded shells thereon, insulating-bushings on said shells, and serving as a support for said base, lamp-terminals on

said base, and means for making series or multiple connections between the lamp-terminals.

8. A receptacle or cluster-socket for incandescent lamps comprising a base or terminal block having threaded shells pivoted thereto, a casing serving as a support for said shells, and means projecting from the upper face of said base-block and constituting terminals, said terminals being free to be connected in different combinations.

9. A receptacle or cluster-socket for incandescent lamps comprising a base or terminal block of insulating material, lamp-terminals mounted thereon, means supported by said terminals for receiving a plurality of incandescent lamps additional central stud-terminals, and means projecting from one face of said terminal block for the connection of circuit-wires, each of said terminals having separate means for making such connections.

10. In a receptacle or cluster-socket, an insulating base or block, threaded shells pivoted thereto, central stud connections or terminals corresponding to said shells, and means projecting from one face of said block adapted to make separate circuit-wire connections with each of said threaded shells and central stud connections or terminals.

11. In a receptacle or cluster-socket, an insulating base or block having arms projecting therefrom, threaded shells pivotally supported from said arms, a casing having apertures, bushings in said apertures and surrounding said shells, whereby said base or block is supported, and means projecting from one face of said base or block for establishing any desired circuit-wire connections with said threaded shells.

12. In a receptacle or cluster-socket, an insulating base or block having protuberances thereon, the upper part of said protuberances being of counterbored form, terminals within said protuberances, threaded shells and terminals therefor, all of said terminals being separate and distinct from one another and capable of receiving separate circuit-wires in different combinations.

13. In a receptacle or cluster-socket, a base or terminal block of insulating material having a plurality of metallic terminals thereon, shells fixed to said terminals, a plurality of metallic clips extending to a point axial of said shells, and separate terminals for said metallic clips.

14. In a receptacle or cluster-socket, a plurality of metallic parts each having a pair of arms, shells supported by said arms, and additional metallic clips extending to a point axial of said shells.

15. In a receptacle or cluster-socket, a plurality of metallic parts each having a pair of arms, shells supported by said arms, and additional metallic clips extending to a point

axial of said shells, all of said metallic parts and clips being insulated from one another.

16. In a receptacle or cluster-socket for incandescent lamps, a base or terminal block, a terminal comprising a metallic part having four arms, two of which are bent into parallel planes, and two of which diverge from one another, a shell on said divergent arms, a pair of screws in said parallel arms constituting a fastening means and a binding-post re-

spectively, and an additional terminal connection for the central stud of the usual incandescent lamp.

In witness whereof I subscribe my signature in the presence of two witnesses.

JOHN H. DALE.

Witnesses:

FREDK. A. HOPKIN,
E. E. BUYNON.